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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO..
10/633,599	08/05/2003	Hartmut Breithaupt	BANH3001/FJD	4820

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EXAMINER

COOLEY, CHARLES E

ART UNIT	PAPER NUMBER
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1723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/633,599

Applicant(s)

BREITHAUP, HARTMUT

Examiner

Charles E. Cooley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-9, 17, 18, 20, 21, 23, 24, 26, 27, 29, 30, 32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-16, 19, 22, 25, 28 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

NON-FINAL OFFICE ACTION AFTER RCE

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 OCT 2006 has been entered.

Election/Restriction & Election By Original Presentation

2. Nonelected apparatus claims 1-9 and subsequently added process claims 17, 18, 20, 21, 23, 24, 26, 27, 29, 30, 32, and 33 remain directed to an invention/species that is independent or distinct from the invention originally claimed for the explicit reasons expressed in the advisory action of 18 SEP 2006, incorporated by reference.

Since an RCE prohibits the switching of inventions (MPEP 706.07(h)), Applicant is not entitled to consideration of the withdrawn claims in this office action merely by the filing of the RCE. However, allowance of any generic claims will entitle Applicant to rejoinder of the withdrawn dependent claims that depend from an allowed generic claim.

3. Claims 1-9, 17, 18, 20, 21, 23, 24, 26, 27, 29, 30, 32, and 33 are thereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention/species, there being no allowable generic or linking claim.

Applicant has timely traversed the restriction (election) requirement.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

Specification

5. The disclosure is objected to because of the following informalities:
 - a. Several words of the specification filed 5 AUG 2003 (apparently a fax copy from E+H PATSERUE WEIL which is the ONLY version in the IFW file) are missing text, perhaps due to a printing error. For example, see page 1 (the title); page 2, last line; page 3, last line; page 5, first and last lines; page 7, first line; page 9, last two lines; page 12, penultimate line. This list is not all-inclusive. Appropriate correction is required.
6. The amended title of the invention is acceptable.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 10, 16, 19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 7-198554.

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JP 7-198554 discloses (per the abstract and Figures) a mixing process including for producing a fluid mixture of predeterminable mass and/or predeterminable volume by mixing a first fluid 1, held in a first fluid line 5, and a second fluid 1', held in a second fluid line 5'; the process comprising the steps of causing the first fluid to flow into a third fluid line 3, which is at least intermittently connected to the first fluid line 5 (via valve 4); and causing the second fluid to flow into the third fluid line 3, which is also at least intermittently connected to the second fluid line (via valve 4'); said steps of causing the first and second fluids to flow into the third fluid line being performed alternately (see the abstract) and inherently repeated several times (e.g., for subsequent batches of mixtures); the first and second fluids being joined to form a mixture that is conducted within the third fluid line 3; line 3 forming a junction at point 15 (i.e., the multiple inlets for fluids being fed into a sole output line 3); the valves 4 and 4' constituting flow adjusters in the first and second lines capable of setting a flow rate of the respective fluids in each flow line.

The examiner also notes the phrase "at least intermittently connected " is of such a broad scope to encompass the fluid lines being fluidly connected at some times to being fluidly connected at all times (which is certainly possible as a function of the position of said valves 4 and 4').

9. Claims 10, 16, 19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-250634.

JP 2000-250634 discloses (per the abstract and Figures) a mixing process including for producing a fluid mixture of predeterminable mass and/or predeterminable volume by mixing a first fluid A, held in a first fluid line 14A, and a second fluid B, held in a second fluid line 14B; the process comprising the steps of causing the first fluid to flow into a third fluid line 12, which is at least intermittently connected to the first fluid line 14A; and causing the second fluid to flow into the third fluid line 12, which is also at least intermittently connected to the second fluid line; said steps of causing the first and second fluids to flow into the third fluid line being performed alternately (see the abstract, i.e., periodically) and inherently repeated several times (e.g., for subsequent batches of mixtures); the first and second fluids being joined to form a mixture that is conducted within the third fluid line 12; line 12 forming a junction at a point (i.e., the multiple inlets for fluids being fed into a sole output line 12); the valves 20A, 20B constituting flow adjusters in the first and second lines capable of setting a flow rate of the respective fluids in each flow line.

The examiner also notes the phrase "at least intermittently connected" is of such a broad scope to encompass the fluid lines being fluidly connected at some times to being fluidly connected at all times.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter

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sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 11, 12, 14, 15, 25, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-198554 or JP 2000-250634 in view of WILMER et al. (US 6,923,568 B2).

JP 7-198554 or JP 2000-250634 disclose the recited subject matter substantially as claimed as explained above but do not disclose the steps of measuring volumetric or mass flow rate in one or more of the three fluid lines or measuring a fluid density in at least one of the three fluid lines. WILMER et al. (US 6,923,568 B2) discloses a process for producing a mixture and teaches steps of measuring volumetric or mass flow rate in one or more fluid lines and measuring a fluid density in one of more fluid lines at col. 6, lines 47-64:

For monitoring a slurry in a semiconductor process, an instrument for continuously measuring mass density (herein after all densities refer to mass density unless specifically indicated otherwise), such as densitometer 5, may be preferred. Measuring density is one manner of tracking concentration. For example, in slurries, the density is related to the amount of inert, non-volatile solids per unit volume. Accordingly, by measuring volumetric flow rate per unit time, for example with a flow meter, and density, the amount of inert solids delivered to a blend of process materials may be monitored. Monitoring density may also be a preferred for a slurry in a semiconductor process because density measuring instruments may produce less agglomeration than other instruments providing similar feedback because they may not introduce the same shear stresses in the slurry. A sufficiently accurate mass flow meter that does not produce unacceptable agglomeration or a percent solids sensor also may be used for this purpose.

and further teaches at col. 14, line 29 through col. 15, line 4:

Where one of the process materials is maintained at a constant volumetric flow rate, a sensor 92 providing data allowing the volumetric flow rate to be converted to a mass flow rate may be included on material supply line 18. Sensor 92 may measure density or a property that may correlated to density, such as temperature. For example, a

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controller 91 may receive a signal from sensor 92 representing a density of the process material and may calculate a mass flow rate of process material based upon this signal and the known volumetric flow.

Controller 91 may also receive signals from a sensor 93 associated with the material supply line through which the volumetric flow rate varies. As with sensor 92, sensor 93 may provide a signal that represents a property that may allow the mass flow in the material supply line to be calculated based on a volumetric flow. As the volumetric flow rate of process material may vary, controller 91 may also receive a signal from a volumetric flow meter 94, allowing the mass flow rate to be calculated. Based upon the mass flow rate in the material supply line, controller 91 may control a valve 21 to provide a mass flow rate that, with the mass flow rate of process material in the other material supply line, provides a desired blend of process materials.

In an alternate embodiment, for example as illustrated in FIG. 10, sensor 93 and volumetric flow meter 94 may be eliminated by providing a sensor 96 downstream of static mixer 22 able to verify that the blended process material is acceptable. For example, where a slurry and DI water are blended, a densitometer, percent solids sensor, or the like may be used to verify that the blended process material is acceptable. Sensor 96 may provide a signal to controller 91 representing the condition of the blended process material. If necessary, controller 91 may adjust the flow rate of one of process materials with valve 21 until a signal representing a set point is achieved from sensor 96. For example, where the process materials are a slurry and DI water the density of the desired slurry/DI water blend may be the set point. If this density is detected to be too low, more slurry may be added and, if it is detected to be too high, the amount of slurry being added may be reduced. In some embodiments, several sensors 96, of different or similar types, may provide signals to the controller representing conditions of the blended process materials.

Accordingly, It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the processes of JP 7-198554 or JP 2000-250634 with steps of measuring volumetric or mass flow rate in one or more of the three fluid lines or measuring a fluid density in at least one of the three fluid lines as taught by WILMER et al. for the purposes of monitoring the mixing process and the mixture(s) produced thereby to thus produce a desired blend of materials from the fluid lines.

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-198554 or JP 2000-250634 in view of LINSSEN et al. (US 2003/0198125 A1).

JP 7-198554 or JP 2000-250634 disclose the recited subject matter substantially as claimed as explained above but do not disclose the steps of measuring fluid viscosity in at least one of the three fluid lines. LINSSEN et al. (US 2003/0198125 A1 discloses a process for producing a mixture and teaches a step of measuring viscosity via sensor 58 in fluid receptacle 46. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the processes of JP 7-198554 or JP 2000-250634 with a step of measuring viscosity in at least one of the three fluid lines as taught by LINSSEN et al. for the purposes of monitoring the viscosity of the materials being mixed and to control the mixing process as a result of the sensed viscosity to bring the viscosity value into a desired range (see paragraphs [0029] and [0033]).

Response to Amendment

13. Applicant's arguments filed 17 OCT 2006 have been fully considered but they are not deemed to be persuasive.

Applicant's arguments regarding the restriction/election requirement were fully addressed in the advisory action of 18 SEP 2006, incorporated by reference. The requirement is still deemed proper and is therefore made FINAL.

The specification objection has been elaborated on. The only copy of the specification in the IFW file contains these errors and must be corrected before allowance to avoid rejection by the printer.

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Applicant did not specifically address the rejection of the claims under JP 7-198554, thus it is not seen where the rejection is in error. Newly found JP 2000-250634 has also been applied against the claims for Applicant's consideration. Applicant concerns regarding the "at least intermittently connected" claim language is addressed in the rejections above.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Hanson teaches measuring fluid parameters such as specific gravity, pressure, temperature, and flow rate of fluids in multiple fluid flow lines. The patent to Shu teaches measuring fluid parameters such as viscosity and specific gravity in multiple fluid flow lines and a valve in each fluid line capable of varying the flow rate of the fluid in the respective line.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. The examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Charles", followed by a stylized, wavy line.

Charles E. Cooley
Primary Examiner
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11 January 2007